

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Dana Alexa Totir et al. Art Unit : 1745
Serial No. : 10/800,905 Examiner : Raymond Alejandro
Filed : March 15, 2004 Conf. No. : 1479
Title : NON-AQUEOUS ELECTROCHEMICAL CELLS

Commissioner for Patents
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THIRD DECLARATION OF DANA ALEXA TOTIR, KIRAKODU S.
NANJUNDASWAMY AND MICHAEL POZIN UNDER 37 C.F.R. § 1.131

1. We are the inventors of the inventions claimed in the above-captioned patent application. The following work was conducted in the United States.

2. Two laboratory notebook pages from a laboratory notebook of Dana Alex Totir are attached. The notebook pages are signed by Ms. Totir and are dated prior to December 3, 2002. The two pages are true and complete copies from the original notebook, except that the dates on the laboratory notebook pages have been whited out and information is highlighted as described below.

3. The laboratory notebook pages demonstrate that electrochemical cells covered by claims 1-5, 8-12, 14-24, 28, 31-35, 39-43, and 45-46 were made and used prior to December 3, 2002.

(a) Some of the information on the notebook pages is highlighted for convenience. See in particular the highlighted information next to "Cell #1" on page 2489-110 and "Cell #2" on page 2489-111. The electrochemical cells were coin cell models that included a plastic housing, a cathode including " β -EMD" (β -electrolytic manganese dioxide) on a "primed Al" (aluminum) current collector. The aluminum current collector in turn was pressed on an "SS grid". SS is stainless steel, and the aluminum current collector thus was in contact with a second metal surface (the stainless steel) different from the surface of the aluminum current collector. The cells included a "Li" (lithium) anode and an electrolyte including "0.05 M" (page 2489-110) or "0.03 M" (page 2489-111) LiBOB. LiBOB is lithium bis(oxalato)borate. Thus, the electrochemical cells described on laboratory notebook pages 2489-110 and 2489-111 include all of the requirements of claims 1-2, 5, 8-12, 31-35, and 45-46.

(b) Laboratory notebook pages 2489-110 and 2489-111 refer to "LiBOB in TDE10" in the highlighted information next to "Cell #1" and "Cell #2". TDE10 is an internal name for an electrolyte that includes, among other ingredients, lithium trifluoromethanesulfonate. Thus, electrochemical cells on laboratory notebook pages 2489-110 and 2489-111 also include all of the requirements of claims 3 and 4.

(c) The aluminum cathode current collector used in the electrochemical cells on laboratory notebook pages 2489-110 and 2489-111 had a size of at least one dimension greater than 2 millimeters. Thus, the electrochemical cells on laboratory notebook pages 2489-110 and 2489-111 include all of the requirements of claims 14-16.

(d) The electrochemical cells on laboratory notebook pages 2489-110 and 2489-111 were designed to be discharged once and then discarded, and thus are primary electrochemical cells as opposed to secondary (rechargeable) electrochemical cells. Thus, the electrochemical cells on laboratory notebook pages 2489-110 and 2489-111 meet all of the requirements of claims 17-24, 28, and 39-43.

4. We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that those statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.


Dana Alexa Totir

02/15/08

Date


Kirakodu S. Nanjundaswamy

03/12/08

Date


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02/14/2008

Date

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of corrosion can all this time be consistent (readily very much larger range)

Must test in more cell cells.

Test:

- H steel electrode passed in 35% acid in H2 content
- H2O2, H2O2 at 10%
- corrosion of 91% Cu and of H alloy @ 3.5V (n. 37)

Two electrode measurement with Ag pseudo reference electrode

3. electrode all in Ag after working electrode to anode and reference electrode

measured over 0.1% Ag electrode in Li reference in 73.00

over 0.1% Ag electrode in Li reference in 73.00

over 0.1% Ag (0.01), Li(CO2) in Li reference in 73.00

over 0.1% Ag (0.01), Li(CO2) in Li reference in 73.00

to compare the peak potential for Ag (0.01) and Li(CO2)

to find out the potential difference.

Chart
 1. 0.01% Ag in Ag and H, H2 content 1651 732
 passed in 35% acid in galvanic H2O2 (35)
 21.00 C.G. 0.05% Li(CO2) in Li reference in 73.00
 1x2 60 1000 cycle and
 H2O2 at 10% (35 at 10)

Chart 2

- Et 2110 et. or - Ag (0.01), Li(CO2), Li(CO2), 1mM ferric in 73.00, 3 CV
 current 4.7 - 37 V, C 20 with
- Et 2110 et. cor - Ag (0.01), Li(CO2), 1mM ferric in 73.00 - open circuit
 apparent to minute Ag potential in 0.01
- Et 2110 et. cor - Ag (0.01), Li(CO2), 1mM ferric in 73.00
 P.D. 6.00, 0 - 0.7 V, C 20 with
- Et 2110 et. or - Ag (0.01), Li(CO2), 1mM ferric in 73.00
 CV - 0.6 - 8 V, ref C 20 with
- Et 2110 et. or - same as above C 20, -11 and 0.01 ref C 20 with

Witnessed & Understood by me,

Date

Recorded by

Date

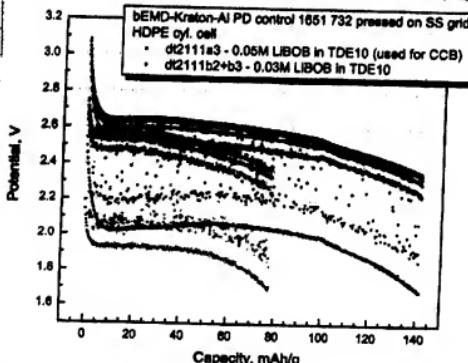
Monica

Date

J. D. K.

Subject Matter

- dE 2111 a1. cor - cell 01 divided in 1/2 - 10 + stopped after 170 cycles
REC lot @ 33 mAh
- dE 2111 a2. cor - open for 2h (cell 01)
- dE 2111 a3. cor - cell 01, REC lot, 33 mAh, 600 cycles
- (Cell 02)**
• dE 2111 a4. cor - 10 - 0.05M Keton a joined H, PD control 1651 732
pressed in 55 grid in 50°C held 10 days (150)
2.600 Cycles, REC 0.03M LIBOB in TDE10 (py)
102 C, 1000 g, 100°C
- dE 2111 b1. cor - open circuit 2L
- dE 2111 b2. cor - REC lot 33 mAh, 580 cycles
- dE 2111 b2. cor - REC lot 33 mAh additional 70 cycles
(selected next day)



Witnessed & Understood by me,	Date	Recorded by	Date
<i>Manole</i>		<i>John</i>	